Pomme de Terre Dam Fact Sheet

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG®**

Project Location and Authorization

Pomme de Terre Dam is located on the Pomme de Terre River, 43.8 miles above the mouth, approximately two miles south of Hermitage, Missouri, in Hickory and Polk Counties. Pomme de Terre Dam was authorized by the Flood Control Act of 1938, as modified by subsequent acts in 1941, 1944, and 1946. Construction began in 1959. The project reached multipurpose pool on 15 June 1963.

Pomme de Terre Dam Physical Characteristics

Pomme de Terre Dam consists of a rolled earth and rock fill embankment; a 170-foot-wide by 865-foot-long uncontrolled spillway on the right abutment; a 3,150-foot earthen rim dike left of the left abutment; and an outlet works with an intake tower and a gated, single, 14-foot-diameter, circular tunnel through the right abutment. The main valley embankment is 4,630 feet long and stands 155 feet above the streambed. A typical section is shown in Figure 1. The crest width is 36 feet and the top elevation of the main embankment is 905 feet mean sea level (msl). Provision was made for construction of a power tunnel through the right abutment in the future.

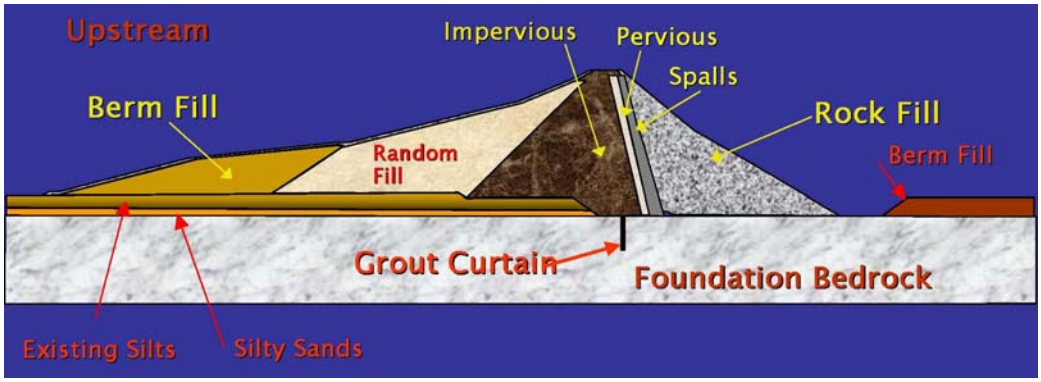

Figure 1. Typical Cross Section of Pomme de Terre Dam

Pomme de Terre Risk Evaluation Results

The Corps has implemented a prioritization process that includes a risk-based evaluation of its entire portfolio of 610 dams. Each dam is being assessed and categorized on a scale of 1–5 by lumping the dams into five bins. Pomme de Terre Dam was assessed with a process the Corps calls the “Screening-Level Portfolio Risk Assessment” (SPRA) in April 2008. Based on the SPRA results, Pomme de Terre was placed in the Dam Safety Action Class (DSAC) III, High Priority (Conditionally Unsafe). The risk assessment methodology that generated Pomme de Terre Dam’s DSAC III rating is a relative risk ranking system (i.e., the risk posed by Pomme de Terre Dam has not been determined in an absolute sense). The dam’s DSAC III ranking may be upgraded or downgraded in the future based on more rigorous evaluations. Currently, there is no evidence to suggest an emergency situation exists, or is about to occur. The risks stem from consequences of very unlikely events.

-- More on reverse side --

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Predominant concerns noted at Pomme de Terre Dam that influenced the DSAC III rating include:

- The stilling basin has severe concrete erosion. High flows could cause continued damage to the stilling basin and impact operations.
- Foundation or abutment seepage and piping are concerns for all dams. The geology (that includes karst-like features in the rock) elevates piping susceptibility. Piezometric data indicate the possibility of a gradually deteriorating grout curtain between approximately Station 18+00 and Station 28+00. Some piezometers in the left abutment show water levels near design assumptions. In an extreme situation, embankment piping into the abutment or foundation rock could result in an embankment breach.

Secondary concerns noted at Pomme de Terre Dam that influenced the DSAC III rating include:

- The rim dike (located southwest of the dam) would have stability issues under rapid drawdown after a spillway design flood event.
- The spillway could erode under very high flows.

As a result of Pomme de Terre Dam's DSAC III rating, the Corps has initiated work to improve the instrumentation and monitoring program, communicate to the public what is being done and why, and improve coordination with emergency management officials. The DSAC III rating and American Recovery and Reinvestment Act funding allowed the Corps to immediately initiate the repair of Pomme de Terre Dam's stilling basin. Other possible actions by the Corps that are funding dependent include some tree removal and studies regarding earthquake impacts, spillway erosion potential, and stability of the rim dike. No long-term operational changes in the reservoir water levels will occur after the stilling basin repair. Pomme de Terre Dam already has a rigorous emergency action plan in place, including a separate surveillance plan.

Stilling Basin Repair

Work is in progress for rehabilitation of Pomme de Terre Dam's stilling basin. Because this rehabilitation work is expected to progress without interruption, and no inexpensive measures exist to prevent further erosion, no interim risk reduction measures are being implemented for the stilling basin.

Stilling Basin Repair Schedule

- Phase I (Construction -- October 2009 to December 2009): Removal of rock and handicapped-accessible ramps.
- Phase II (Design -- October 2009 to May 2010; Construction -- July/August 2010 to March 2011): Concrete U-Line of rock stilling basin and repair of concrete ogee section.
- Phase III (Construction -- February 2010 to April 2010): Build bulkhead and new trash racks.
- Phase IV (Construction -- March 2011 to June 2011): Build handicapped-accessible sidewalks and railings around newly constructed stilling basin walls.